

#2

OIKE

## RAW SEQUENCE LISTING

DATE: 08/23/2001

PATENT APPLICATION: US/09/930,503

TIME: 17:24:33

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3 <110> APPLICANT: HENRY, JAMES
4   CAHILL, CATHERINE
5   YASHPAL, KIRAN
7 <120> TITLE OF INVENTION: APPLICATION OF ANTI-SENSE OLIGONUCLEOTIDES AND
8   THERAPEUTIC USES THEREOF
10 <130> FILE REFERENCE: 39245-173913
C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/930,503
C--> 13 <141> CURRENT FILING DATE: 2001-08-16
15 <150> PRIOR APPLICATION NUMBER: 60/226,086
16 <151> PRIOR FILING DATE: 2000-08-18
18 <160> NUMBER OF SEQ ID NOS: 59
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23 <211> LENGTH: 311
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32           20           25           30
34 Val Leu Trp Ala Ala Ala Tyr Thr Val Ile Val Val Thr Ser Val Val
35           35           40           45
37 Gly Asn Val Val Val Met Trp Ile Ile Leu Ala His Lys Arg Met Arg
38           50           55           60
40 Thr Val Thr Asn Tyr Phe Leu Val Asn Leu Ala Phe Ala Glu Ala Ser
41   65           70           75           80
43 Met Ala Ala Phe Asn Thr Val Val Asn Phe Thr Tyr Ala Val His Asn
44           85           90           95
46 Glu Trp Tyr Tyr Gly Leu Phe Tyr Cys Lys Phe His Asn Phe Phe Pro
47           100          105          110
49 Ile Ala Ala Val Phe Ala Ser Ile Tyr Ser Met Thr Ala Val Ala Phe
50           115          120          125
52 Asp Arg Tyr Met Ala Ile Ile His Pro Leu Gln Pro Arg Leu Ser Ala
53           130          135          140
55 Thr Ala Thr Lys Val Val Ile Cys Val Ile Trp Val Leu Ala Leu Leu
56   145          150          155          160
58 Leu Ala Phe Pro Gln Gly Tyr Tyr Ser Thr Thr Glu Thr Met Pro Ser
59           165          170          175
61 Arg Val Val Cys Met Ile Glu Trp Pro Glu His Pro Asn Lys Ile Tyr
62           180          185          190
64 Glu Lys Val Tyr His Ile Cys Val Thr Val Leu Ile Tyr Phe Leu Pro
65           195          200          205
67 Leu Leu Val Ile Gly Tyr Ala Tyr Thr Val Val Gly Ile Thr Leu Trp
68           210          215          220
70 Ala Ser Glu Ile Pro Gly Asp Ser Ser Asp Arg Tyr His Glu Gln Val
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73 Ser Ala Lys Arg Lys Val Val Lys Met Met Ile Val Val Val Cys Thr
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76 Phe Ala Ile Cys Trp Leu Pro Phe His Ile Phe Phe Leu Leu Pro Tyr
77                260                265                270
79 Ile Asn Pro Asp Leu Tyr Leu Lys Lys Phe Ile Gln Gln Val Tyr Leu
80                275                280                285
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83                290                295                300
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97 aaatggataa cgtcctcccg gtggactcag acctctccc aaacatctcc actaacacct 180
98 cggaacccaa tcagttcgtg caaccagcct ggcaaattgt cctttgggca gctgcctaca 240
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129                20                25                30
131 Val Leu Trp Ala Ala Ala Tyr Thr Val Ile Val Val Thr Ser Val Val
132                35                40                45
134 Gly Asn Val Val Val Met Trp Ile Ile Leu Ala His Lys Arg Met Arg

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137 Thr Val Thr Asn Tyr Phe Leu Val Asn Leu Ala Phe Ala Glu Ala Ser
138 65      70      75      80
140 Met Ala Ala Phe Asn Thr Val Val Asn Phe Thr Tyr Ala Val His Asn
141      85      90      95
143 Glu Trp Tyr Tyr Gly Leu Phe Tyr Cys Lys Phe His Asn Phe Phe Pro
144      100      105      110
146 Ile Ala Ala Val Phe Ala Ser Ile Tyr Ser Met Thr Ala Val Ala Phe
147      115      120      125
149 Asp Arg Tyr Met Ala Ile Ile His Pro Leu Gln Pro Arg Leu Ser Ala
150      130      135      140
152 Thr Ala Thr Lys Val Val Ile Cys Val Ile Trp Val Leu Ala Leu Leu
153 145      150      155      160
155 Leu Ala Phe Pro Gln Gly Tyr Tyr Ser Thr Thr Glu Thr Met Pro Ser
156      165      170      175
158 Arg Val Val Cys Met Ile Glu Trp Pro Glu His Pro Asn Lys Ile Tyr
159      180      185      190
161 Glu Lys Val Tyr His Ile Cys Val Thr Val Leu Ile Tyr Phe Leu Pro
162      195      200      205
164 Leu Leu Val Ile Gly Tyr Ala Tyr Thr Val Val Gly Ile Thr Leu Trp
165      210      215      220
167 Ala Ser Glu Ile Pro Gly Asp Ser Ser Asp Arg Tyr His Glu Gln Val
168 225      230      235      240
170 Ser Ala Lys Arg Lys Val Val Lys Met Met Ile Val Val Val Cys Thr
171      245      250      255
173 Phe Ala Ile Cys Trp Leu Pro Phe His Ile Phe Phe Leu Leu Pro Tyr
174      260      265      270
176 Ile Asn Pro Asp Leu Tyr Leu Lys Lys Phe Ile Gln Gln Val Tyr Leu
177      275      280      285
179 Ala Ile Met Trp Leu Ala Met Ser Ser Thr Met Tyr Asn Pro Ile Ile
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182 Tyr Cys Cys Leu Asn Asp Arg
183 305      310
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187 <211> LENGTH: 1268
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197 acaaaagaat gaggacagtg acgaactatt ttctggtgaa cctggccttc gcggaggcct 360
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228 Val Leu Trp Ala Ala Ala Tyr Thr Val Ile Val Val Thr Ser Val Val
229 35 40 45
231 Gly Asn Val Val Val Met Trp Ile Ile Leu Ala His Lys Arg Met Arg
232 50 55 60
234 Thr Val Thr Asn Tyr Phe Leu Val Asn Leu Ala Phe Ala Glu Ala Ser
235 65 70 75 80
237 Met Ala Ala Phe Asn Thr Val Val Asn Phe Thr Tyr Ala Val His Asn
238 85 90 95
240 Glu Trp Tyr Tyr Gly Leu Phe Tyr Cys Lys Phe His Asn Phe Phe Pro
241 100 105 110
243 Ile Ala Ala Val Phe Ala Ser Ile Tyr Ser Met Thr Ala Val Ala Phe
244 115 120 125
246 Asp Arg Tyr Met Ala Ile Ile His Pro Leu Gln Pro Arg Leu Ser Ala
247 130 135 140
249 Thr Ala Thr Lys Val Val Ile Cys Val Ile Trp Val Leu Ala Leu Leu
250 145 150 155 160
252 Leu Ala Phe Pro Gln Gly Tyr Tyr Ser Thr Thr Glu Thr Met Pro Ser
253 165 170 175
255 Arg Val Val Cys Met Ile Glu Trp Pro Glu His Pro Asn Lys Ile Tyr
256 180 185 190
258 Glu Lys Val Tyr His Ile Cys Val Thr Val Leu Ile Tyr Phe Leu Pro
259 195 200 205
261 Leu Leu Val Ile Gly Tyr Ala Tyr Thr Val Val Gly Ile Thr Leu Trp
262 210 215 220
264 Ala Ser Glu Ile Pro Gly Asp Ser Ser Asp Arg Tyr His Glu Gln Val
265 225 230 235 240
267 Ser Ala Lys Arg Lys Val Val Lys Met Met Ile Val Val Val Cys Thr
268 245 250 255
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274          275          280          285
276 Ala Ile Met Trp Leu Ala Met Ser Ser Thr Met Tyr Asn Pro Ile Ile
277          290          295          300
279 Tyr Cys Cys Leu Asn Asp Arg Phe Arg Leu Gly Phe Lys His Ala Phe
280 305          310          315          320
282 Arg Cys Cys Pro Phe Ile Ser Ala Gly Asp Tyr Glu Gly Leu Glu Met
283          325          330          335
285 Lys Ser Thr Arg Tyr Leu Gln Thr Gln Gly Ser Val Tyr Lys Val Ser
286          340          345          350
288 Arg Leu Glu Thr Thr Ile Ser Thr Val Val Gly Ala His Glu Glu Glu
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VERIFICATION SUMMARY

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L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date